BUREAU OF ENVIRONMENT
CONFERENCE REPORT

SUBJECT: NHDOT Monthly Natural Resource Agency Coordination Meeting
DATE OF CONFERENCE: March 16, 2016
LOCATION OF CONFERENCE: John O. Morton Building
ATTENDED BY:

NHDOT
Matt Urban
Ron Crickard
Gary Clifford
Kerry Ryan
Roger Dionne
Mike Licciardi
David Scott
Rebecca Martin
Jason Abdulla
Stephanie Micucci
Ron Grandmaison
Jon Evans
Victoria Chase
Randy Talon
Shaun Flynn
Joe Adams
Marc Laurin
Mike Dugas
Jon Hebert
Meli Dube
Stephen Liakos
Sam Fifield
Don Lyford
Peter Salo
Tom Cleary
Mark Hemmerlien

Army Corps of Engineers
Michael Hicks

EPA
Mark Kern

FHWA
Leigh Levine

NHDES
Gino Infascelli
Ridgely Mauck

NH Fish & Game
Carol Henderson

NHB/DRED
Amy Lamb

Consultants/Public Participants
Christine Perron
Vicki Chase
Nick Scegell
Bob Durfee
Ed Weingartner

PRESENTATIONS/ PROJECTS REVIEWED THIS MONTH:
(minutes on subsequent pages)

(When viewing these minutes online, click on a project to zoom to the minutes for that project)

NOTES ON CONFERENCE:

Finalization of February 17th 2016 Meeting Minutes

Gino Infascelli indicated he would like to request some more time to review and submit comments. Matt Urban agreed to keep the minutes open for another week and that he would finalize them thereafter.

Salem, 28980 (Patrol Shed 514) Non-Federal

Gary Clifford presented an overview of this projects history, explaining that they have investigated several locations to rebuild the Salem 514 Patrol Shed. G. Clifford explained that the existing shed is servicing several roads that are State Maintained out of this undersized and outdated facility. G. Clifford shared some photos of the existing facility to give an impression of the tight quarters that these maintainers are dealing with. He also shared some photos of the lack of storage for their salt piles. G. Clifford explained that the portion of "Town Forest Entrance" is actually owned by DOT but leased to the Town. G. Clifford explained that prior to designing the new shed at this location they were well into concept plans at another location in Salem. However, he explained the Town and Con. Comm didn't like the location that had been selected for several reasons. It was the Town and Con Comm who suggested the DOT look more closely at rebuilding at the sheds current location. G. Clifford explained he knew this would come with some challenges because the existing shed would need to remain operational while the new shed is being constructed. Furthermore he explained that it was surrounded by Prime Wetlands. G. Clifford shared some plans showing the Prime wetland lines and also shared some of the draft concepts for how this site might be laid out, showing that the Department has been trying to minimize its impacts to wetlands and also provide treatment.

Matt Urban explained while viewing the draft plan that showed the water quality treatment area that we were still in the process of reducing slopes to avoid the prime wetlands as it was currently shown.

M. Urban also explained that the new design would include a salt shed that would completely cover the existing salt pile that currently is only covered with a tarp each year.

M. Urban also explained that we have hired Gove Environmental Consultants to refine the prelinary wetland delineation and to provide a wetlands function and values assessment.

Carrol Henderson indicated that there wasn't an NHB on the agenda form. G. Clifford was able to provide a record (NHB15-3164) that indicated no occurrences in this area.

Gino Infascelli indicated that DOT should review the Town's Prime Wetlands report to compare the functions and values assessments.

G. Infascelli also expressed a concern for a lack of buffer around the perimeter of the property. Explaining we should try to keep as much vegetated buffer between the property and the wetland as possible in the design.

Ridgely Mauck noted that infiltration basins are to have a three foot separation to the seasonal high water table.

M. Urban indicated we would be able to provide additional landscaping/grass seed to maintain a vegetated buffer.

G. Infascelli also indicated that if we do have direct prime wetland impacts that they would need to be mitigated onsite.

This project has not been previously discussed at a Monthly Natural Resource Agency Coordination Meeting.

Sutton, 40501 (112/126)
Tony Weatherbee provided an overview of the project. The existing structure is a concrete rigid frame bridge with a 22'-0" span and is 23'-5" wide. There are spalls at the curbs and there are areas of leaking in the soffit. There are major spalls in the northwest wingwall, minor spalls in the southwest wingwall, scaling at the north abutment and erosion at all four wingwalls. The concrete deck will be replaced and riprap will be added in front of the abutments. Temporary scaffolding will be placed to facilitate the repair. The bridge will not be widened.

T. Weatherbee explained that there is a dam owned by DES about 30 feet upstream.

Carol Henderson asked if the riprap being installed would be exposed and T. Weatherbee said yes.

Gino Infascelli said that no mitigation is required. He mentioned that flows should be coordinated with the Dam Safety Bureau. C. Henderson asked for riprap to be minimized as much as possible.

This project has not been previously discussed at a Monthly Natural Resource Agency Coordination Meeting.

Woodstock, 40571 (171/153)
Tony Weatherbee provided an overview of the project. The existing structure is a concrete arch bridge with a 68'-10" span and is 32'-3" wide. There are medium to heavy spalls in the abutments. There are cracks, spalls and minor settlement in the wingwalls. There will be toewalls installed on the abutments and the wingwalls will be faced. Existing riprap will be temporarily moved so the wingwalls may be accessed. Riprap will be added in front of the abutments. Temporary scaffolding will be placed in the river and on the bank to facilitate the repair.

Gino Infascelli mentioned that the location map looked incorrect. T. Weatherbee agreed and the correct bridge location was identified. Matt Urban noted that rebar was used to hold in riprap on the bank. T. Weatherbee said that we would rather chink in stones but because the riprap was placed on bedrock, rebar pins had to be used to hold the stone. Carol Henderson asked if A-Jacks could be used. T. Weatherbee said no because the riprap was going to be added in smaller areas and A-Jacks are designed to create a mat over a larger area.

Amy Lamb said that there were no NHB hits at this location.

G. Infascelli said that no mitigation is required.

This project has not been previously discussed at a Monthly Natural Resource Agency Coordination Meeting.

Stewartstown, 16312, X-0001(240)

Rebecca Martin provided a brief overview of the changes to the project from when it was presented in October of last year. The new proposal includes a reduced span from 80 feet back to 50 feet due to Front Office direction. The intent of the meeting is to discuss any concerns associated with the bridge replacement and returning to a shorter span (50 feet), as was initially proposed in May 2015. The proposed project includes bridge replacement of NH Route 145 over Bishop Brook (Br. No. 121/114). Work includes removal of the entire existing bridge structure and construction of a new bridge. Roadway work will also be included for the bridge approaches along the same alignment. The original proposal was a 50 foot bridge span. Materials and Research and the Construction Bureau had recommended the increased span of 80 feet due to constructability concerns. When the 80 foot span was presented to the Front Office, the design team was directed to return to the 50 foot span.

Michael Licciardi explained that there is an approximately $400,000 difference between the cost of construction and sixty years of maintenance of the two bridges. David Scott explained the shorter span will cost less to build and to maintain. To construct the 80 foot span bridge the cost would be $962,000. The 50 foot span will be $880,000. D. Scott stated that he believes the Front Office is concerned with building and maintaining a bridge that is larger than what is needed.

Matt Urban explained that the 50 foot span is still compliant and exceeds the 38 foot bank full width. M. Urban explained that the reason for bringing the project back to the Natural Resource meeting is to avoid any surprises when the wetland permit application is received.

Gino Infascelli commented that the mitigation has been discussed and an ARM fund payment agreed upon.

Carol Henderson inquired about a wildlife bench. D. Scott explained that the bench is still intended. C. Henderson explained that any flat area can serve as the bench and that the smoother the surface, the easier for animals to utilize.

C. Henderson inquired about installing humus with seed over the stone. D. Scott agreed to include this in the project, but not under the bridge.

R. Martin confirmed that the bridge has been inspected for bats, with no signs of bat utilization. Amy Lamb commented that as long as the impact areas have not expanded, the rare plant survey (Case's Ladies Tresses or Loesel's Wide Lipped Orchid) has been complete and the project is not expected to impact rare plants.

Cornish, 40296, X-A004(378)

Ron Grandmaison provided an overview of the project. This project will address a portion of Saint-Gaudens Road in the Town of Cornish. The project begins at NH Route 12A and continues on

Saint-Gaudens Road to the Saint-Gaudens National Historic Site (NHS) Visitor's Center, a length of approximately 3,700 feet. This section of the road is State-maintained and is located entirely within the Saint-Gaudens National Historic Site. Funding for the project is being provided by the Federal Highway Administration (FHWA) through the Federal Lands Access Program (FLAP). The National Park Service (NPS) was responsible for securing the FLAP grant for this project. The project is scheduled to advertise on September 27, 2016. The Department has retained McFarland Johnson to complete the NEPA process.

The pavement on Saint-Gaudens Road is severely deteriorated. The road is narrow, generally between 16' and 18' in width, and trees are located right up against the road. The project will involve reconstructing the roadway, replacing guardrail, and making minor drainage improvements. There are potential concerns with cutting trees along the roadway and the intent is to avoid removing trees unless they are already damaged or pose a hazard. The primary intent of the project is to improve the riding surface and the width of the roadway will not change. Existing guardrail will be replaced with a different type of guardrail system, which will either involve a wood component or brown powder-coated Nu-Guard rail. The selected rail will need to be one that has been crash tested. The NPS has asked the Department to extend certain guardrail runs.

Christine Perron provided an overview of known resources in the project area. The NEPA process is currently scheduled to be complete by May 11th. The Connecticut River is located 500' to the west of the Saint-Gaudens Road/NH Route 12A intersection. Most of the project area is steep and forested, with the exception of the maintained grounds of the NHS at the northern end of the project. McFarland Johnson delineated wetlands in December 2015, prior to snow cover, and identified wetlands at the northern and southern ends of the project, as well as two streams that flow through the project area. A stream in the upper portion of the project originates in a small wetland adjacent to the visitor's center parking area. A portion of this stream is ditched where it is located immediately adjacent to the roadway. This stream has a watershed size of 25.6 acres. The second stream is narrow and steep and is carried under Saint-Gaudens Road through a pipe that has a perched outlet of approximately 16". This stream has a watershed size of 19.2 acres.

Blow-me-down Brook is near the project area and is subject to the Shoreland Water Quality Protection Act. The Protected Shoreland extends to the western edge of the project area. The need for a Shoreland Permit will be determined once design elements are finalized. The Connecticut River is a NH Designated River, and the lower part of the project area is within the ¼ mile river corridor. Since one stream crossing is located within this river corridor, that crossing is classified as a Tier 3 stream crossing under the Stream Crossing Rules.

The NH Natural Heritage Bureau reported records of wood turtle, northern long-eared bat, dwarf wedgemussel, eastern waterleaf, and an exemplary floodplain forest. Given that the habitat in the project area is steep, the streams are shallow and not gravelly, and there is limited shrubby riparian habitat, the project area does not seem to contain ideal wood turtle habitat. The project will not involve work within the Connecticut River; therefore dwarf wedgemussel will not be a concern. Northern long-eared bat was documented at the NHS during a bat survey in 2012, and suitable habitat for this species does exist within the project area. There are no floodplain forests in the project area. Potential habitat for eastern waterleaf does exist on the eastern slope at the southern end of the project. Impacts to this area are not anticipated.

Amy Lamb commented that the potential habitat for eastern waterleaf could be surveyed prior to construction, or an environmental commitment could be included in the NEPA document that prohibits impacts within the potential habitat.

Carol Henderson suggested contacting Kim Tuttle regarding wood turtles.

C. Henderson asked how northern long-eared bats would be addressed. Stephanie Micucci replied that tree clearing will be very limited and would occur only during the non-active season for bats (September 1 – April 14).

C. Henderson asked if culverts would be replaced. S. Micucci replied that most culverts were recently replaced by the maintenance district. The project may involve repairs to headwalls. At the Tier 3 stream crossing, the inlet headwall is in need of replacement and, if this work is included in the project, the perched outlet could also be addressed.

C. Henderson asked if the new guardrail would have the same clearance and height.
R. Grandmaison replied that clearance and height would be the same.

No further questions or concerns were raised with the project as presented.

This project has not been previously discussed at a Monthly Natural Resource Agency Coordination Meeting.

Lebanon, 13951, X-A000(141)
Jon Evans provided a brief review of the project which was last reviewed by the Resource Agencies on October 16, 2013. The proposed project consists of replacing the bridge that carries US Route 4 over the Mascoma River (Br. No. 188/126), near the intersection of NH Route 4A in Lebanon, NH. This project has been under construction for the last several years and traffic has now been diverted onto the new bridge and the old bridge has been removed.

J. Evans noted that as was requested by the resource agencies at several of the previous meetings the contractor removed the pier within the center of the river. The pier removal was completed by removing the pier down to a joint in the concrete that was located several feet below the surface of the riverbed and then covered the remaining concrete with rocky streambed material similar to that of the surrounding area. Subsequent to removing the center pier, the riverbed material in this area appears to have naturally migrated and left the remainder of the previously buried pier, exposed.

J. Evans and Randy Talon showed pictures of the exposed pier and indicated that although it is visible from the riverbank and the adjacent bridge, because it was removed to a joint the concrete, it is smooth and level with the streambed. J. Evans acknowledged that the Department had previously committed to removing the pier several feet below the streambed elevation but noted that unfortunately the temporary causeway has since been removed. As the causeway has been removed the Department wanted to check with the resource agencies to determine if they felt the additional environmental impacts associated with reconstructing the temporary causeway and

further removing the pier to achieve an elevation several feet below the new riverbed elevation was appropriate.

R. Talon also noted that this section of river is a Class A drinking water supply for the City of Lebanon and that one of the City's water intakes is located just downstream from the project location. He noted that so far throughout the construction of this project the City of Lebanon's water department has not had any issues with the project and that the Department really does not want to jeopardize the good rapport that has been developed with the City water department.

Since NHF&G had been one of the agencies that originally expressed a strong preference towards removing the pier, J. Evans asked Carol Henderson if she had any concerns with leaving the pier in its current condition, flush with the riverbed. C. Henderson indicated that she did not have a concern with this condition and agreed that the benefits of further pier removal were probably not worth the risks associated with the additional impacts.

Gino Infascelli indicated that the only concern he had was whether or not the pier presented a safety issue for kayaks and canoes. R. Talon indicated that since the pier is flush with the riverbed and smooth he did not feel that it presented a concern to recreational boats. G. Infascelli indicated that given R. Talon's assessment he did not have any concerns with leaving the pier in its current condition.

G. Infascelli indicated that in lieu of asking the Department to document this decision through a permit amendment or similar documentation, he would place a copy of the meeting minutes in the DES wetland's file to document the decision not to pursue further pier removal.

Lancaster –Guildhall, 16155, A001(159)

NHDOT proposes to replace the Rogers' Rangers Bridge (NHDOT Br. No. 111/129; CT. River Br. No. 26), which carries US Route 2 over the Connecticut River between the towns of Lancaster, NH and Guildhall, VT.

Vicki Chase introduced the project. The project is located in northern New Hampshire and is surrounded by farmland. The state line is on the Vermont side of the river but is at the low water line, so a portion of the river (during normal or high flows) lies within Vermont.

Ed Weingartner described the existing bridge – a two-span truss bridge, 398' long, built in the 1950's with a cantilevered sidewalk added in 1996 for pedestrian and snowmobile use. The bridge is on the red list due to its deteriorated condition. Rehabilitation and replacement alternatives were considered with replacement being the preferred alternative.

V. Chase reviewed natural resources at the site. The Connecticut River is a sixth order stream at this location and the replacement will require a major impact wetland permit. The watershed is 1,243 square miles extending north into Canada. There are federally endangered dwarf wedge mussels at the site and formal Section 7 consultation with USFW is underway. The area around the bridge has not been previously surveyed for dwarf wedge mussels, but the region is allegedly a hotspot for the species, so their presence is assumed.

The river is impaired by pH and aluminum (on previous 303(d) list it was impaired by pH and E. coli).

Riverine clubtail (*Stylurus amnicola*) was previously listed as a rare species at the site, but it no longer appears on the NHNHB datacheck. A review of rare species GIS information on the Vermont side revealed a rare plant population along the edge of the river. *(Follow-up with Vermont Natural Heritage botanist Bob Popp indicated that the plant was Wright's spike-rush (Eleocharis diandra) which is a globally rare species of sedge that grows on exposed mudflats. It was collected over 50 years ago, and its exact location along the river is uncertain. Since no disturbance of the Vermont shoreline is proposed no survey was recommended.)*

NHDOT will coordinate as required under the agreement between USFW and FHWA for federally listed Northern Long Eared Bats.

E. Weingartner reviewed the proposed bridge details,

- Relocation approximately 70' North (Upstream)
    - Bridge Length = 400'Two 200' Long Spans

- Bridge Width = 47'
    - Two 12' Travel Lanes
    - Two 5' Shoulders
    - One 10' Sidewalk (Extra Width for Snowmobiles)
      Single River Wall Pier
    - Founded on Drilled Shafts to Minimize Riverbed Impacts
    - Evaluating the use of a precast footing similar to Sarah Long Bridge replacement

- Full Height Concrete Abutments
    - Founded on Driven Piles
      -

There will be no utilities carried under the bridge.

Construction access – HTA anticipates that access will be via a combination of stone causeways and trestles. The stone causeways would end at the existing abutments and there would be no stone within wetlands jurisdiction. HTA is currently analyzing eliminating impacts to the riverbed within Vermont for both construction and removal. There will be temporary towering put in place on both sides to allow the truss to be taken out in sections, moved off onto land and dismantled. The existing pier would be removed to the mudline and the existing abutments would be removed to approximately three feet below ground.

New abutments will be essentially in line with the existing abutments (400' span replacing the existing 398' span). The proposed superstructure will not be any lower than the existing superstructure.

Impacts to the riverbed would include temporary impacts for the bridge removal and construction and permanent impacts for the construction of the new pier. With the removal of the existing pier there will be very little net fill in the river. A shoreland permit will also be required. The intent is to avoid Vermont permitting by staying out of the riverbed.

Outstanding issues include the Section 7 consultation which must be completed in order to complete NEPA. Section 106 has not yet been completed pending coordination with VTrans SHPO on an archaeological survey. There was also an architectural Section 106 survey undertaken

that determined that the bridge was eligible for the National Register of Historic Places. Mitigation measures for the bridge removal will be outlined in an MOA signed by FHWA, Vermont and NH SHPOs', and NHDOT.

Carol Henderson asked if the National Marine Fisheries Service had been consulted about Essential Fish Habitat for Atlantic Salmon. Consultation will take place as suggested.

Amy Lamb asked that if rare plant surveys were required by Vermont Natural Heritage that they also occur on the New Hampshire shoreline. (*As noted no surveys are required in Vermont.)* Correspondence with Vermont Natural Heritage will be forwarded to NHNHB.

Gino Infascelli asked is there are any other proposed wetland impacts associated with the bridge replacement – there are not. There will be riprap proposed around the abutments which are outside of jurisdiction, above the top of bank. A question was asked about the surveyor's "water line" which will be removed from the wetland permit plans.

The existing pier area that will be removed (to the top of the footing) is 175 square feet. The proposed pier footprint will be 656 square feet. The pier will be built on drilled shafts and will not require scour protection. Matt Urban suggested a follow up meeting with G. Infascelli and Lori Sommer to confirm that no mitigation would be required.

G. Infascelli asked about stormwater treatment. E. Weingartner noted the existing drainage patterns will be maintained and the impervious area will be increased by approximately 11,700 sf due to the realignment of the approaches and wider pavement. An additional 23,400 sf of impervious area will be treated through treatment swales on both the Vermont and NH sides constructed above the 10-year floodplain and meeting minimum residence time requirements.

Derry, 24861, X-A002(975)

Mike Dugas and Jon Hebert gave an overview of the project, which will address safety concerns on NH Route 28 bypass at the intersection of Scobie Pond Road and English Range Road in Derry. The intersection will be signalized and NH Route 28 bypass widened to accommodate left turn lanes in both directions. There will be no widening on Scobie Pond Road and English Range Road except for the approaches immediately adjacent to the intersection.

The existing condition has site distance and high actual travel speed issues, which contribute to a high accident rate. The current drainage pattern includes swales on both sides of the roadway and closed drainage, however, the condition and efficiency of the existing pattern is questionable. Impervious surface will be increased by 16,000 square feet and will require permanent treatment to meet Alteration of Terrain rules. Treatment areas and options are unknown at this time and will be identified in conjunction with wetland delineations to be completed this spring. Right of way will need to be acquired for the widening and likely for placement of permanent stormwater treatment areas. A public information meeting will be held in April 2016, to be followed by a public hearing later this summer.

Meli Dube discussed the known natural resources and potential conflicts in the area. Wetlands are present and will be delineated Spring 2016. Wetland delineations will help locate potential stormwater treatment areas. The NH Natural Heritage Bureau has been consulted and confirmed that although there are records in the area, there are no concerns associated with the proposed work. An acoustic survey for the presence of northern long-eared bats was completed Summer

2015 and confirmed that they are absent from the project area. There are rock walls and houses which may be eligible for listing on the Register of Historic Places within the project area, Cultural Resources coordination is ongoing.

Gino Infascelli asked what the linear feet of disturbance is from project limit to project limit. J. Hebert responded that the project extends approximately 1,500 linear feet on NH Route 28 bypass. G. Infascelli indicated that there are prime wetlands in the area and to be aware of prime wetland locations and project creep, especially for placement of stormwater treatment areas. M. Dube indicated that the Department is aware of the prime wetlands, which are located approximately 2000' south of the project area and that we will avoid impacts to these areas.

Bow, 40346

This project involves the repair and widening of a precast rigid frame that carries Dunklee Road over Bow Bog Brook (Bridge No. 182/113). DuBois & King Project Manager, Bob Durfee, presented the project details including alternatives review and impacts.

The bridge was constructed in 2006 and immediately had problems. There is drainage issues related to surface runoff, the wingwalls and retaining walls were not properly designed or constructed and have shifted. The existing structure is a 3-sided rigid frame, 46' length, 20' wide by 6' high opening.

Proposed repair work includes installation of wingwall footings, reconstruction of the wingwall and retaining wall precast block wall, installation of waterproofing over the existing rigid frame, raising the roadway profile to improve drainage and backfill over bridge and behind wingwalls.

Widening of the existing rigid frame is necessary for slope stabilization and roadway improvements to allow for wider typical section consistent with Town standards and improved safety. Widening includes installation of an 8' to 13' length of a skewed rigid frame section (3-sided box) on the downstream/north end. The skewed section will minimize wetland impacts. Other improvements include the removal of large boulders in the stream on the upstream end of the project area that are a remnant from previous construction and are contributing to scour at the bridge.

Wetlands were surveyed in 2015 and there are impacts anticipated with this project. A standard dredge and fill permit is anticipated. Impacts include temporary water diversion practices during construction, installation of new footings, removal of the large boulders, and placement of stone rip rap along the footings to protect for scour. A standard dredge and fill permit from NHDES Wetlands Bureau is anticipated. A NHB datacheck identified Blanding's Turtle (endangered),Eastern Hognose Snake (endangered), Northern Black Racer (threatened), Wood Turtle (special concern). Follow up with NH Fish & Game during permitting phase will determine if impacts are expected and if any special conditions need to be incorporated into the final design. Carol Henderson suggested making F&G aware of the history of this project.

NH Division of Historical Resources has reviewed the project. There are no concerns for cultural resource impacts at the project location. A memorandum of effect has been issued by NHDHR.

Gino Infascelli requested that after the fact permitting be completed for work that was done in excess of the prior permit.

C. Henderson asked if the extension was necessary. B. Durfee responded that it is necessary to allow for proper construction of wingwalls and guardrail interface and safety of the travel way.

G. Infascelli mentioned that mitigation would likely be necessary due to linear foot impacts to stream bank. G. Infascelli asked about rip rap placement in the box. B. Durfee responded that the rip rap is placed to match existing stream bottom and protects the footings from scour.

C. Henderson asked about coffer dam and stated preference for water diversion that does not completely block stream flowage and constructing footings accordingly.

This project has not been previously discussed at a Monthly Natural Resource Agency Coordination Meeting.

Bow, 24225

This project involves the replacement of a metal plate culvert that carries Birchdale Road over White Brook (Bridge No. 92/136). DuBois & King Project Manager, Bob Durfee, presented the project details including alternatives review and impacts to wetlands.

The bridge is currently on the municipal redlist and is closed to traffic due to its condition. The current bridge is hydraulically inadequate. The existing roadway width is 22'. The existing culvert length is 61' and has an approximate opening of 13' wide x 6.5' high with a metal bottom. Birchdale Road acts as a causeway between two wetland areas. This culvert essentially equalizes these areas.

A Hydrologic and Hydraulic investigation of the bridge site identified the existing culvert as hydraulically inadequate and provided evaluation for selected alternatives. The preferred alternative is a 26' precast rigid frame. The preferred alternative meets NHDES stream crossing guideline criteria (1.2 times bankfull width + 2'). Wetlands were surveyed in 2015 and are anticipated to be impacted with the construction project. Impacts include temporary water diversion practices during construction, and placement of stone rip rap along the footings to protect for scour. A standard dredge and fill permit from NHDES Wetlands Bureau is anticipated. A NHB datacheck identified drainage marsh - shrub swamp system within the project area.

NH Division of Historical Resources has reviewed the project. There are no concerns for cultural resource impacts at the project location. A memorandum of effect has been issued by NHDHR.

Gino Infascelli asked who delineates the wetlands. B. Durfee stated that D&K staff wetlands scientist Charlotte Brodie completed the delineation and is certified in NH.

G. Infascelli stated that the impacts include prime wetlands and mitigation is needed.

Amy Lamb asked about impacts to wetlands. B. Durfee stated that all work will occur within the right of way. The length of the culvert/bridge will be reduced from 61' to 30'.

Mark Kern asked about wildlife passage. B. Durfee stated that the rip rap placed inside the structure will provide a bench for wildlife passage.

This project has not been previously discussed at a Monthly Natural Resource Agency Coordination Meeting.

Walpole-Charlestown, 14747 & 14747A, X-004(487) & X-A000(149)

Samantha Fifield began by giving a brief review of the project which involves the reconstruction of approximately 2.7 miles of NH Route 12 between Main Street in North Walpole and NH Route 12A in Charlestown. S. Fifield noted that as was discussed at the January 20, 2016 Natural Resource Agency Coordination Meeting, due to substantial increases in the estimated project cost, the Department has been forced to look at different options to address the deficiencies of this section of roadway. The intent of this meeting was to review the options that the Department has developed since the January meeting and to get additional feedback from the Resource Agencies.

S. Fifield reviewed a PowerPoint presentation which has been included in in the meeting minutes. This presentation highlighted the existing conditions and deficiencies along this section of roadway, a review of the various alternatives previously considered during design and a review of the alternatives currently being considered.

During the presentation S. Fifield indicated that the purpose of this effort was to address the existing safety issues associated with this narrow, substandard section of roadway as well as to address the stability issues associated with the roadway embankments within the southern segment of the project area. The Department had previously selected an alternative (referred to as alternative 3-2-3) which moved the roadway and adjacent railroad to the east, away from the Connecticut River, throughout much of the corridor. However, increases in the estimated costs associated the extensive rock excavation necessary to shift the railroad to the east and difficulties in maintaining rail traffic throughout construction have meant that the selection of alternative 3-2-3 is no longer reasonable and feasible.

S. Fifield indicated that in order to reduce construction costs and maintain railroad traffic throughout construction the Department has been forced to evaluate options which avoid impacting the railroad. Two such alternatives have been identified, both of which require a slight westward shift in the alignment of the roadway to accommodate for the additional pavement width necessary to address the safety issues associated with the existing lack of shoulders. The first alternative involves the installation of two retaining walls; one approximately 3,000 ft. long in the southern segment of the project and the other approximately 1,800 ft. long in the northern segment. The second alternative involves the installation of armored slopes with surface vegetation to achieve the necessary additional pavement width and address the slope stability issues.

S. Fifield noted that both of the new alternatives are variations of alternative 2 which was previously reviewed but eliminated as construction costs were thought to be similar to those associated with alternative 3-2-3. However updated estimates now indicate that alternative 3-2-3

would cost approximately $33 million which far exceeds the $16.9 million which has been budgeted for this project. The previously mentioned retaining wall option is estimated to cost approximately $27 million and the armored bank with surface vegetation alternative is estimated to cost approximately $17 million.

S. Fifield noted that although the retaining wall alternative currently under consideration does avoid impacting the railroad, there are still multiple disadvantages to this option vs. the armored slope option. The construction of the retaining walls would take substantially longer and have greater impacts on traffic than the armored slope option. The costs associated with this alternative are nearly $10 million more than the armored slope option. Although the retaining wall option would improve the slope instability issues in the southern segment of the roadway, there is still no guarantee that the existing 1:1 slope would not fail below the wall before, during or after construction. In the event of such a failure, and depending on its severity, the Department might still be forced to repair the slope which would require impacts to the river similar to those of the armored slope option. S. Fifield also noted that unlike armored slopes, retaining walls require routine maintenance and eventually must be replaced. From an aesthetic standpoint, retaining walls are generally not well regarded, particularly in a rural area such as that of the project.

For the above reasons the Department is recommending the armored slope option, as it stabilizes the existing slopes, eliminates the need for future repair and maintenance, minimizes the duration of construction, reduces traffic impacts, and costs substantially less than any other alternative. S. Fifield also noted that this alternative avoids impacting the railroad, which is an historic resource, and also avoids impacting large areas of dense vegetation on the Slopes of Fall Mountain. The Department plans to steepen the armored slopes to the maximum extent practicable in order to minimize impacts to the Connecticut River and its associated backwaters. Under this alternative the Department would also re-establish vegetation on top of the stone fill in order to reduce the ecological and aesthetic impacts associated with this alternative. This is anticipated to be a similar treatment to that which was recently used along NH Route 63 adjacent to Spofford Lake in Chesterfield.

S. Fifield noted that the armored slope alternative does impact the Connecticut River and its banks to a greater extent than the retaining wall option. S. Fifield indicated that the armored slope option is estimated to require approximately 2.5 acres of Army Corps of Engineers (ACOE) jurisdictional wetland impacts and an additional 3.4 acres of NH Wetlands Bureau jurisdictional bank impacts. The Department has included the costs associated with a potential in-lieu fee mitigation payment in the Department's $17 million estimate for the armored slope alternative.

In weighing all of the advantages and disadvantages of the various alternatives considered during the development of this project, the Department feels the environmental impacts associated with the armored slope alternative have been minimized to the maximum extent practicable and is seeking feedback from the resource agencies regarding this potential preferred alternative.

Mark Kern asked how far into the river the new stone would extend. Don Lyford indicated that in order to achieve the necessary 8' of additional pavement width within the roadway, the embankment would need to be extended to the same extent which would require corresponding river impacts of approximately 8' depending on the location. S. Fifield also mentioned that given

the height of the slope between the river and the roadway within the southern segment, a temporary stone platform extending an additional 10-12 feet into the river would need to be constructed at the bottom of the slope to allow construction equipment to access lower portions of the slope.

Gino Infascelli asked if the Department knew what the elevation of the ordinary high water was. S. Fifield indicated that TransCanada, the operator of the dam approximately 1.5 miles downstream, has flowage rights in this area that extend to 291.6 feet. As such the OHW line remains fairly steady at approximately 290-291 feet.

Carol Henderson mentioned that the pictures of the Chesterfield slope appeared to be mostly grass and asked if the Department could provide vegetation that was a bit more robust. S. Fifield indicated that based upon discussions with the Department's Geotechnical Section and past Departmental experience it was unlikely that trees could be planted along the slope particularly along the southern slope since it is simply too long and steep to provide adequate hydration for many of the larger tree species. The Department does however plan to develop a planting plan which would include smaller shrub/woody type vegetation which would be more likely to survive in this particular location. G. Infascelli suggested that in order to ensure survival of the planted vegetation the Department look at what is currently growing along the slopes and develop a planting plan which mimics that which already exists. C. Henderson and Amy Lamb asked that native vegetation be utilized and the Department make sure that no invasive species were included in the revegetation effort. A. Lamb requested that NHB be provided an opportunity to review the species list which would be included in the planting plan. J. Evans indicated that the Department would provide this list to the NHB as soon as it was available.

G. Infascelli encouraged the Department to consider constructability and make sure that there was space to adequately treat construction stormwater runoff. A. Lamb asked if water quality treatment was considered/proposed. S. Fifield and J. Evans responded that under the previous alternative (3-2-3) the Department's options for permanent water quality treatment were extremely limited due to a lack of available space. Given that similar constraints exist within the armored slope and retaining wall options it is unlikely that any additional BMPs would be incorporated into the new design. However, the Department will once again coordinate with the NHDES Alteration of Terrain Bureau to evaluate and incorporate any feasible and reasonable permanent BMP measures.

D. Lyford asked if the group felt like the armored slope alternative which incorporates surface vegetation would be something that could be permitted at both the State and Federal level. M. Kern indicated that it appeared to him that the Department had done its due diligence in looking at every possible alternative and minimizing impacts to the maximum extent practicable and that given the constraints of the site he didn't have a concern with the armored slope alternative as discussed.

J. Evans indicated that given that the project is not anticipated to exceed 3 acres of ACOE jurisdictional wetland impacts the Department anticipates that this project will qualify for coverage under the NH Programmatic General Permit and would not require an individual permit from the ACOE. M. Kern noted that although the ACOE was not present at this meeting, the EPA would not object to PGP coverage.

J. Evans and D. Lyford indicated that given that there were no objections to the armored slope alternative that the Department will now review this as the preferred alternative with the project's Public Advisory Committee (PAC) which has been involved throughout the development of the project. It is anticipated that the PAC will be receptive to the selection of this alternative and that the Department will then begin efforts to redesign the project to incorporate the armored slope alternative.